

GREENWorks

Ideas for a Cleaner Environment

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Can Your Well Water Pass The Test?

The New Hampshire Department of Environmental Services is calling on private well owners to test their water more frequently and for a wider range of contaminants. About 40 percent of New Hampshire's population (about 530,000 people) get their drinking water from around 250,000 private residential wells, and a surprisingly high percentages of those wells have unhealthy levels of natural contaminants.

Based on studies by the U.S. Geological Survey, about 20 percent of private wells in New Hampshire have arsenic levels that are higher than public water systems are allowed to provide (10 parts per billion), and in some areas it's as many in one in every two wells. Long-term exposure to arsenic has been linked to cancer, cardiovascular disease, immunological disorders, diabetes and other medical issues. The Dartmouth Toxic Metals Research Program recently produced a 10-minute video on the health effects of arsenic in groundwater in New Hampshire; you can find the video by searching the internet for "arsenic in small doses."

There's no federal or state standard for radon in drinking water, but an estimated 55 percent of private wells exceed the NHDES-recommended action level of 2,000 picocuries per liter. Only by testing can homeowners make informed decisions about treating their well water to minimize the amount of radon gas coming into their homes. The main health risk from radon exposure is an increased risk of lung cancer from breathing radon gas; long-term exposure to radon leads to the deaths of an estimated 100 New Hampshire residents each year.

No State Testing Requirements

Private well water is rarely tested, except when properties are sold or a change in taste, odor, or color raises suspicions about water quality. New Hampshire has no State requirements for the testing of private wells, although the law (RSA 477:4-c) requires that certain information concerning a home's water system be disclosed to a purchaser, including an unsatisfactory water test. ("Unsatisfactory water test" is not defined.) Many mortgage lenders require some water quality testing when writing a mortgage. However, their requirements are not consistent, and historically there has been more emphasis on aesthetic contaminants than health-related contaminants. Some municipalities, however, do have private well testing requirements.

Even when a private well is tested, the analyses often don't include all of the right contaminants. The naturally occurring contaminants of concern include arsenic, fluoride, radon, and other radionuclides (radioactive chemicals). Other contaminants, caused by human activities, are industrial solvents, petroleum products and fuel additives [such as benzene, toluene, ethylbenzene, xylene and methyl-t-butyl ether (MtBE)], and lead and copper from plumbing.

Bacteria in wells may be from either natural or human sources but typically enter wells because of poor construction. Bacteria shows up in about one in five water samples from private wells analyzed at the state Public Health Laboratory.

When should private wells be tested?

NHDES recommends the following: 1. When a well is first drilled. 2. At least once every 3 to 5 years for all wells. 3. At the time of all real estate transactions. 4. If obvious changes in water quality (such as changes in taste, odor or color) are noticed. The frequency of periodic testing should be based on past testing results, testing results for neighboring wells, and past and present land uses in the area. Testing for specific contaminants should be performed more frequently if they are known to be present at elevated levels.

What Parameters Should Be Tested in Private Wells?

NHDES recommends the following analyses, which cost approximately \$165 at the Public Health Laboratory: arsenic, bacteria, radon, alpha screen, lead, copper, nitrate, nitrite, fluoride, pH, sodium, chloride, iron, manganese, and hardness. NHDES also recommends testing for volatile organic compounds once every five to ten years, which costs \$120 at the Public Health Laboratory. If the cost of testing is too great for some homeowners, NHDES recommends spreading out the testing over time, performing some tests now and the rest in later years. A number of private labs also offer these tests. Private labs tend to be more expensive than the State Lab, but they also tend to provide results to the well owner more quickly.

American Academy of Pediatrics Weighs In

In May 2009, the American Academy of Pediatrics issued a policy statement on Drinking Water from Private Wells and Risks to Children, urging states to require testing when homes are sold, and urging local governments to provide access to information about local groundwater conditions and recommendations for testing.

What is Being Done?

A handful of New Hampshire municipalities already require testing of private wells, typically in connection with certificates of occupancy. A group of state, federal, and university scientists and public health professionals have formed the New Hampshire Arsenic Consortium, which is cooperating to educate the public and conduct research about arsenic in private wells. NHDES is working with N.H. Department of Health and Human Services and Dartmouth College to better understand the health risks to private well users and to help private well users make informed decisions about well testing and water treatment options. NHDES is also working with municipal building code officials on a uniform interpretation of “potable water” as referenced in the International Plumbing Code to provide for improved public health protection. For more information about NHDES’s private well testing recommendations and about the health effects associated with various contaminants, and a list of accredited private labs, please call NHDES Drinking Water and Groundwater Bureau at (603) 271-2513, or visit the NHDES web site at www.des.nh.gov and look for “Private Well Testing” under the “A to Z List.”

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